

TSIREL'NIKOV, V.I.; KOMISSAROVA, L.N.; SPITSYN, Vikt.I.

Corroding effect of zirconium tetrachloride vapors on 1Kh18N9T
steel and nickel at high temperatures. Atom. energ. 13 no.1:
51-53 J1 '62. (MIRA 15:7)
(Corrosion and anticorrosives)

S/020/62/146/001/013/016
B101/B144

AUTHORS: Tsirel'nikov, V. I., Komissarova, L. N., and Spitsyn, Vikt.
I., Academician

TITLE: Study of the thermal stability of the molecules of zirconium
and hafnium tetrahalides on collision with a hot surface in
vacuo

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 1, 1962, 122 - 124

TEXT: The decomposition coefficients of Zr and Hf tetrahalides excepting
the fluorides were determined. The tetrahalides were heated in an ampoule
with capillary outlets (Fig. 1) so that the effusion followed the Knudsen
cosine law. The molybdenum target was heated to 1000 - 1500°C and the
samples evaporated in vacuo at 10^{-6} mm Hg. On dissolving the target in
 HNO_3 the Zr or Hf was precipitated as metallic film, and weighed. Spectrum
analysis showed a slight diffusion of Mo from the target into Zr or Hf.
The amount of Zr or Hf precipitated and that of tetrahalide evaporated
were used to calculate the decomposition coefficient K_d . At 1500°C this

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was 100% for ZrI_4 , 90% for HfI_4 , 68% for $ZrBr_4$, 61% for $HfBr_4$. There was almost no dissociation in the case of the tetrachlorides. K_d is proportional to the target temperature. The thermal stability of Zr and Hf tetrahalides corresponds to their formation enthalpies. There are 2 figures and 2 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: March 26, 1962

Fig. 1. Apparatus for determining K_d of Zr and Hf tetrahalides.

Legend: (1) Apparatus, (2) extension of the ampoule, (3) heater, (4) molybdenum target, diameter 12-15 mm, thickness 0.5 mm, (5) molybdenum lead-in, (6) sight hole, (7) trap, (8) pyrometer, (9) liquid nitrogen, (10) ampoule.

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Study of the thermal stability...

S/020/62/146/001/013/016
B101/B144

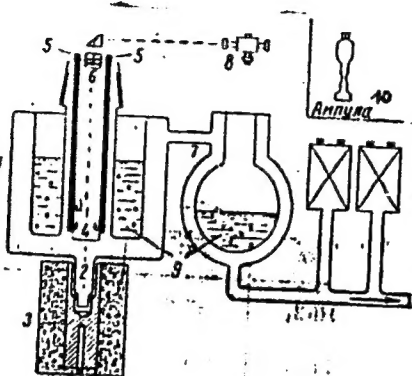


Fig. 1

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21-500
AUTHORS:

40185
8/020/62/145/005/016/020
B106/B144
Tsirel'nikov, V. I., Komissarova, L. N., and Spitsyn, Vikt. L.
Academician

TITLE:

Study of vapor density of hafnium tetrachloride at high temperatures

PERIODICAL:

Akademiya nauk SSSR. Doklady, v. 145, no. 5, 1962, 1081-1084

TEXT: The vapor density of hafnium tetrachloride was determined at high temperatures with the aid of the radioisotope Hf^{181} following a method described by F. S. Dainton, H. M. Kimberley (Trans. Farad. Soc., 46, 912 (1950)) and V. V. Illarionov, S. A. Cherepanova (DAN, 133, 1086 (1960)). The tagged $HfCl_4$ contained 0.3% $ZrCl_4$ and <0.001% Fe, Ti, Si, Al. Isothermal and isobaric studies were carried out. The radiometric measurements were made whilst heating and cooling, and the resulting values showed good agreement (Fig. 3). The experimental setup consisted of two electric furnaces arranged at right angles. The vessels in the furnaces were joined by a capillary tube heated to 550°C; of such size that no noticeable pressure drop occurred. In the isothermal measurements, the

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B106/B144

Study of vapor density ...

first furnace was kept at constant temperatures between 400 and 1000°C and the temperatures in the second furnace were varied between 280 and 350°C, whereas in the isobaric tests, those temperatures were varied in the first and kept constant in the second furnace. The error of measurement was $\pm 2.5\%$. At high temperatures and low pressures, the hafnium tetrachloride vapor follows the ideal gas laws if it is assumed to be monomolecular. According to data of W. Fisher (Zg. anorg. u. allgem. Chem., 211, 321 (1933)), zirconium tetrachloride vapor behaves analogously. At a pressure increase above atmospheric pressure and a temperature decrease to near sublimation temperature, the vapor density of the real HfCl_4 vapor is as much as 10% lower than the ideal vapor density. This deviation cannot be explained by association, but by the nonideality of the vapor near condensation temperature. The data obtained are required for calculating technological processes to separate zirconium and hafnium tetrachlorides in the gaseous state. There are 3 figures and 2 tables. The most important English-language reference is: A. A. Palko, A. D. Ryon, D. W. Kuhn, J. Am. Chem. Soc., 62, 319 (1958).

Card 2/3

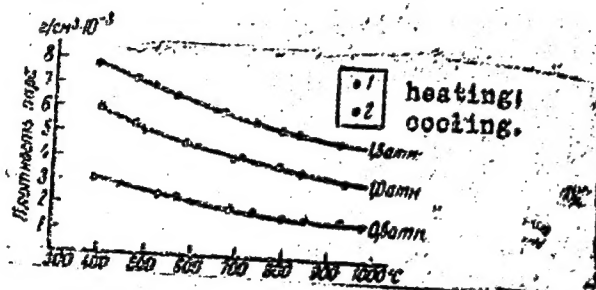
Study of vapor density ..

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B106/B144

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 4, 1962

Fig. 3. Temperature dependence of the vapor density of HfO_4 at constant pressure.
legend: ordinate -- vapor density, $\text{g/cm}^3 \cdot 10^{-3}$,



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S/078/60/005/007/028/043/XX
B004/B060

AUTHORS: Spitsyn, Vikt. I., Afonskiy, N. S., Tairel'nikov, V. I.

TITLE: Thermal Decomposition of Isopolychromates of Potassium 27

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 7,
pp. 1505 - 1508

TEXT: The authors report on their thermographic investigation of CrO_3 , $\text{K}_2\text{Cr}_2\text{O}_7$, $\text{K}_2\text{Cr}_3\text{O}_{10}$, and $\text{K}_2\text{Cr}_4\text{O}_{13}$. They found $S_{298}^0 = 17.45$ e.u. for the standard entropy of CrO_3 . The thermograms presented in Figs. 1-4, and the thermogravimetric heating curve shown in Fig. 5 for the mentioned compounds resemble each other considerably. When heated to 800°C at a rate of $10^\circ\text{C}/\text{min}$, $\text{K}_2\text{Cr}_2\text{O}_7$ is almost not decomposed at all, while $\text{K}_2\text{Cr}_3\text{O}_{10}$ melts at 243°C , and $\text{K}_2\text{Cr}_4\text{O}_{13}$ at 210°C to form $\text{K}_2\text{Cr}_2\text{O}_7$ and CrO_3 . $\text{K}_2\text{Cr}_2\text{O}_7$ lines appear in the roentgenogram in this connection (Fig. 6). Only the decomposition of liberated CrO_3 occurs above the melting point. The following crystal

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Thermal Decomposition of Isopolychromates of Potassium S/078/60/005/007/028/043/XX
B004/B060

lattice parameters were found. $K_2Cr_3O_{10}$: $a = 6.14 \text{ \AA}$, $b = 7.29 \text{ \AA}$, $c = 6.07 \text{ \AA}$, $\beta = 101^\circ$, $Z = 1$, $\rho_{x\text{-ray}} = 2.64$. $K_2Cr_4O_{13}$: $a = 7.50 \text{ \AA}$, $b = 8.55 \text{ \AA}$, $c = 9.47 \text{ \AA}$, $\beta = 92^\circ$, $Z = 2$, $\rho_{x\text{-ray}} = 2.70$. The authors mention a paper by T. V. Rode, and thank Yu. P. Simanov and L. M. Kovba for their discussions and assistance in the X-ray analyses. There are 6 figures and 19 references: 6 Soviet, 2 US, 1 Danish, 3 French, and 6 German.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova, Kafedra neorganicheskoy khimii (Moscow State University imeni M. V. Lomonosov, Chair of Inorganic Chemistry)

SUBMITTED: May 22, 1959

Card 2/2

SPITSYN, Vikt.I.; AFONSKIY, N.S.; TSIREL'NIKOV, V.I.

Thermal decomposition of rubidium and cesium tri- and tetrachromates.
Zhur.neorg.khim. 9 no.4:845-848 Ap '64. (MIRA 17:4)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, kafedra
neorganicheskoy khimii.

TSIREL'NIKOV, V.I.; KOMISSAROVA, L.N.; SPITSYN, Vikt., I., akademik

Thermal stability of zirconium and hafnium tetrahalide molecules
striking a hot surface in vacuo. Dokl. AN SSSR 146 no.1:122-124
S '62. (MIRA 15:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Zirconium halides) (Hafnium halides)

S/192/62/003/003/002/006
D228/D307

AUTHORS: Spiridonov, V. P., Akishin, P. A. and Tsirel'nikov,
V. I.

TITLE: Electronographic investigation of the structure of
zirconium and hafnium tetrachloride molecules in the
gaseous phase

PERIODICAL: Zhurnal strukturnoy khimii, v. 3, no. 3, 1962, 329-330

TEXT: The molecular structure of $ZrCl_4$ and $HfCl_4$ in the gaseous phase was investigated electronographically. This question is important in view of the need for information about the thermodynamic properties of these chlorides. The electronograms were obtained at 200 - 300°C and processed photometrically at the Computer Center of the MGU (Moscow State University). Experimental and theoretical data both suggest that the molecules possess the structure of the true tetrahedron. The values found for the internuclear Me-Cl distances agree well with those of previous workers. The closeness

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Electronographic investigation of ...

S/192/62/003/003/002/006
D228/D307

of these distances for $ZrCl_4$ and $HfCl_4$ is in accordance with the phenomenon of "Lanthanide compression⁴". There are 2 figures and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University im. M. V. Lomonosov)

SUBMITTED: January 8, 1962

Card 2/2

28652

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S/020/61/139/006/019/022
B103/B101

AUTHORS: Tsirel'nikov, V. I., Komissarova, L. N., and
Vikt. I. Spitsyn, Academician

TITLE: Thermal conductivity and viscosity of zirconium- and hafnium
tetrachloride vapors in the temperature range 300-700°C

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 6, 1961, 1389-1391 X

TEXT: The authors determined: 1) thermal conductivity, 2) viscosity of the vapors of a) zirconium-, b) hafnium tetrachloride between 300 and 700°C. The above data are required for the development of new methods of separating a) and b). Ad 1): The apparatus used was a double furnace with dural blocks whose temperatures were measured by an automatic electronic potentiometer type ЭПН-09 (EPP-09). For measuring the thermal conductivity a platinum filament (thickness: 0.05 mm) stretched along the longitudinal axis of a pyrex tubule, was used. A platinum resistance thermometer indicating the wall temperature of the tubule, is bifilarly coiled upon it. The platinum filament is electrically heated in the atmosphere of the gas to be examined. At constant amperage, the

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resistance depends on the temperature of the filament and thus on the thermal conductivity of the gas. The temperature is measured in a resistance bridge. First, the resistances of platinum filament and thermometer are measured at room temperature, and then diagrams of the temperature dependence of their resistances are plotted. After placing the tubule into the furnace, the temperature difference between platinum filament and tubule walls as depending on the amperage of the current heating the platinum filament are measured at various wall temperatures, either in vacuo (10^{-3} mm Hg), or in dry hydrogen. Then, the tubule is filled with powdery (a) or (b), is evacuated to 10^{-3} mm Hg, sealed, and again put into the furnace. The lower block is heated up to $300-320^{\circ}\text{C}$. At this temperature, the vapor pressures of (a) or (b) are approximately 0.75 atm; the thermal conductivity of the vapor is independent of the temperature. The temperature of the upper block is varied between 350 and 500°C . Method of measurement: at a given wall temperature between 350 and 500°C , the temperature of the platinum filament and the current consumption are measured. These data serve for setting up the diagrams of the dependence of W on ΔT at given wall temperatures, and that of W on the wall temperature at constant $\Delta T = 20^{\circ}\text{C}$. (1) is calculated according to the

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equation $\lambda = \frac{\lambda_1(W_2 - W_0)}{W_1 - W_0}$ where λ_1 is the thermal conductivity of hydrogen at the temperature concerned, W_0 , W_1 , and W_2 are the amperages required for generation of a temperature difference of 20°C in vacuo, in H_2 , and in the vapors of (a) and (b), respectively. As expected, the coefficients of the thermal conductivities of (a) and (b) vapors increase with increasing temperature. This function is linear. The thermal conductivity of (a) is higher than that of (b). This difference increases with increasing temperature. At 300°C, the coefficients of the thermal conductivity are $4.31 \cdot 10^5$ and $3.67 \cdot 10^5$; at 500°C they are $6.35 \cdot 10^5$ and $4.89 \cdot 10^5$ cal/cm·sec·deg. Ad 2). The authors applied the method of vapor discharge through a capillary (Ref. 4, see below). The viscosity coefficient was calculated from the Hagen-Poiseuille equation. The values required for this: vapor pressure at inlet and outlet of the capillary; the quantity of vapor passing the capillary within a certain time, and the capillary parameters, were experimentally determined. The furnace used had a nickel and a dural block. The temperature of the nickel block was measured by an automatic

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potentiometer type ЭПВ-2 (EPV-2) between 350 and 700°C, that of the dural block by a chromel-alumel thermocouple with a ПП (PP) potentiometer, and was controlled by a special system (between 250 and 350°C). The quartz phial with a capillary fused on to it, was filled with freshly sublimed (a) or (b). Method of measurement: After filling up to approximately 1/3, the phial is weighed and placed into the furnace which is heated up to a given temperature. The phial is placed into the dural block and the capillary into the nickel block. After 5-10 min, the phial is taken out, cooled down and weighed. Thus, the amounts of (a) or (b) which passed the capillary, are measured. The vapor pressures of (a) and (b) are calculated according to the equations $\log P_{\text{mm}} = -5400/T + 11.766$ for (a), and $\log P_{\text{mm}} = -5197/T + 11.712$ for (b). The temperature of the dural block is chosen such as to guarantee a pressure of 200 mm Hg in the phial. The viscosity coefficient of the vapor at a given temperature of the capillary is calculated from the formula $\eta = \frac{\pi \cdot r^4 \cdot \tau \cdot \rho}{8 \text{ ML}} \frac{p_1^2 - p_2^2}{2p_1}$ containing a correction for the gas expansion in the capillary, with r denoting the

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S/020/61/139/006/019/022
B103/B101

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radius of the capillary, p_1 being the pressure in the phial, and p_2 being the atmospheric pressure, τ denoting the time of the experiment, M being the weight loss of the phial, L being the length of the capillary, and ρ being the vapor density in the capillary at given pressure and temperature. ρ is calculated on the basis of the gas laws by considering the vapor to be an ideal gas. The measurements were conducted between 350 and 700°C. At these temperatures, the viscosity coefficients were directly proportional to the temperature. The viscosity of (b) is somewhat higher than that of (a). With raising temperature it increases somewhat more than that of (a). It was found at 500°C:

$\eta_{ZrCl_4} = 2640 \cdot 10^{-7}$ poise; $\eta_{HfCl_4} = 3505 \cdot 10^{-7}$ poise. There are 4 figures,

2 tables, and 5 references: 1 Soviet and 4 non-Soviet. The reference to the English-language publication reads as follows: Ref. 4: A. O. Rankin, Proc. Roy. Soc., A88, 575 (1918).

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

Card 5/6

Thermal conductivity and viscosity of...

SUBMITTED: April 28, 1961

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S/020/61/139/006/019/022
B103/B101

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Card 6/6

SPITSYN, Vikt. I.; AFONSKIY, N.S.; TSIREL'NIKOV, V.I.

Reaction of chromic anhydride with potassium chromate. Zhur.
neorg.khim. 5 no.9:1970-1972 8 '60. (MIRA 13:11)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova,
Kafedra neorganicheskoy khimii.
(Potassium chromate) (Chromium oxide)

BERDONOSOV, S.S.; TSIREL'NIKOV, V.I.; LAPITSKIY, A.V. [deceased]

Determination of the density and pressure of zirconium and
hafnium tetrabromide vapors. Vest. Mosk. un. Ser. 2:Khim. 20
no.4:26-29 J1-Ag '65. (MIRA 18:10)

1. Kafedry radiokhimii i neorganicheskoy khimii Moskovskogo
gosudarstvennogo universiteta.

Subject : USSR/Meteorology AID P - 3840

Card 1/1 Pub. 71-a - 3/35

Authors : Savarenskiy, Ye. F., T. A. Proskuryakova, and V. S. Tsirel'-Spriutson

Title : On the interdependence between microseismic waves and cyclone location over oceans

Periodical : Met. 1. gidr., 6, 13-18, N/D 1955

Abstract : Causes of microseismic waves are analyzed. Research over the Atlantic Ocean in the USA and Europe is reported. The ways of determining the position of cyclones by studying the location and direction of microseismic waves are explained. Three diagrams. Two Russian sources, 1912, 1946, 5 English, 1940-1954, and 1 French, 1944.

Institution : None

Submitted : No date

RUSSIA/Cultivated Plants. Fruits. Berries.

M

Abs Jour: Ref Zhur-Biologiya, No 5, 1958, 20528.

Author : C. Tsirdya

Inst : Not given.

Title : The Behavior of the Chasselas Dore and Fetyaska Belaya
Districted Grape Varieties in the Vineyards of Copou
under 1956 Conditions.
(Povedeniye rayonirovannykh sortov vinograda Shasla dore i
Fetyaska belaya na vinogradnikakh Kopou v usloviyakh 1956 g.)

Orig Pub: Gradina, via si livada, 1957, 6, No 6, 46-49.

Abstract: No abstract.

Card : 1/1

SAVARENSKIY, Ye.F.; PROSKURYAKOVA, T.A.; TSIREL'-SPRINTSSON, V.S.

Relation between microseismic fluctuations and the position of
ocean cyclones. Meteor. i gidrol. no.6:13-18 N-D '55.
(Cyclones) (Microseisms) (MLRA 9:2)

TSIREL'NIKOV, V.L.; KOMISSAROVA, L.N.; SPITSYU, VIKT.I., akademik

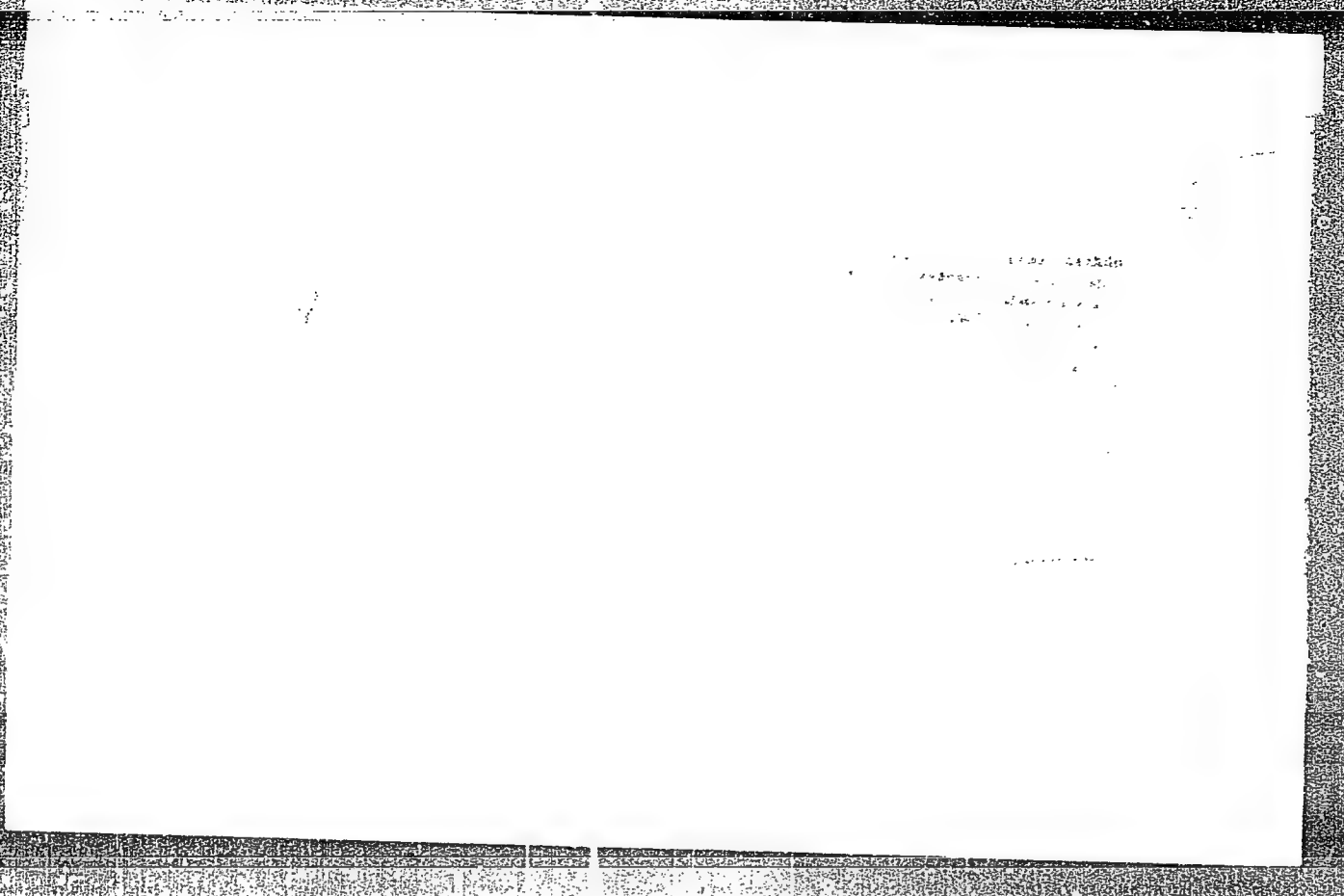
Thermal conductivity and viscosity of zirconium tetrachloride and hafnium tetrachloride vapors in the temperature range of 300 to 700°. Dokl. AN SSSR 139 no.6:1389-1391 Ag '61.

(MIRA 14:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Zirconium chloride)
(Hafnium chloride)

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757110017-1



APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757110017-1"

AVROV, P.Ya.; DITMAR, V.I.; FILIP'YEV, G.P.; SHALABAYEV, S.A.; LI, A.B.;
SHAKHOV, R.A.; MAYLIBAYEV, M.M.; TSIREL'SON, B.S.

Gas bearing capacity of the Usharal structure in the Chu
Depression. Vest. AN Kazakh. SSR 21 no.1:69-73 Ja '65.
(MIRA 18:7)

AKHMEDESAFIN, U.M., akademik; AVROV, P.Ya.; ZHAPARKHANOV, S.Zh. kand. geologo-mineral. nauk; LI, A.B., kand. geologo-mineral. nauk; TSIREL'SON, E.S.

Artesian waters of cretaceous deposits of the eastern Kyzyl Kum and the Arys' Depression and the outlook for their use. Vest. AN Kazakh. SSR 21 no.6:38-46 Je '65. (MIRA 1967)

1. Akademiya nauk Kazakhskoy SSR (for Akhmedsafin), 2. Otkrytyy korrespondent AN Kazakhskoy SSR (for Avrov).

AVROV, P.Ya.; LI, A.B., kand. geologo-mineralogicheskikh nauk; KRAYEV, P.I.;
TSIREL'SON, B.S.

Outlook for the development of supply sources for the petroleum
and gas industries of Kazakhstan. Vest. AN Kazakh. SSR 20 no.8:
3-8 Ag '64. (MIRA 17:11)

TSIREL'SON, D.A.

Ideal active electric network elements. Elektrosviaz' 15 no.8:47-
57 Ag '61.

(Electric networks)

(MIRA 14:7)

BR
ACCESSION NR: AP4041005

S/0106/64/000/006/0067/0072

AUTHOR: Tsirel'son, D. A.

TITLE: Theory of active impedance converters

SOURCE: *Elektrosvyaz'*, no. 6, 1964, 67-72

TOPIC TAGS: impedance converter, negative impedance converter, active impedance converter, long distance communication

ABSTRACT: The fundamentals of a theory of generalized impedance converters and inverters are presented. It is shown that an active impedance converter can be synthesized from a perfect power converter, a perfect transformer, a generalized gyrator, and a unit impedance converter. This latter determines the characteristic features of the active converter. Perfect active elements may help in determining (a) the interdependence between all known perfect four-pole converters and (b) the methods of realization of such converters. The most

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TSIREL'SON, D.A.

Contribution to the theory of active impedance converters. *Elektrosvyaz'*
18 no.6:57-72 Jo '64.
(MIRA 18-1)

TSIREL'SON, D.A.

Synthesis of reactance converters. Elektrosviaz' 18 no.8:
52-57 Ag '64. (MIRA 17:2)

27781

S/106/61/000/008/005/006
A055/A127

9,3200 (1040,1067,1135)

AUTHOR: Tsirel'son, D. A.

TITLE: Ideal active elements of electric circuits

PERIODICAL: Elektrosvyaz', no. 8, 1961, 47-57

TEXT: In this article the author suggests a method to construct ideal four-pole converters, based on the use of ideal active elements. The possibility is also shown of using them for creating a new type of equivalent circuits of tubes, transistors etc. The author explains the meaning of ideal active elements and reproduces the matrices:

$$\begin{bmatrix} i_1 \\ i_2 \end{bmatrix} = \begin{bmatrix} 0 & 0 \\ Y_n & 0 \end{bmatrix} \begin{bmatrix} u_1 \\ u_2 \end{bmatrix} \quad (1)$$

$$\begin{bmatrix} u_1 \\ u_2 \end{bmatrix} = \begin{bmatrix} 0 & 0 \\ Z_n & 0 \end{bmatrix} \begin{bmatrix} i_1 \\ i_2 \end{bmatrix} \quad (2)$$

and the equations:

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Ideal active elements of electric circuits

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$$i_2 = Y_n u_1 \quad (3)$$

$$u_2 = Z_n i_1 \quad (4)$$

(1) and (3) characterize the voltage-into-current converters (V. Ct. Conv.) and (2) and (4) the current-into-voltage converters (Ct. V. Conv.). The cascade connection of a V.Ct.Conv. and a Ct.V.Conv. is called a "unilateral" ("odno-storenniy") voltage converter (Un.V.Conv.), since it converts voltage into voltage. Analogously, the cascade connection of a Ct.V.Conv. and a V.Ct.Conv. gives a "unilateral" current converter (Un.Ct.Conv.). After these general explanations and definitions, the author describes a method of constructing what he calls "ideal active four-pole converters", i.e. nonautonomous, nonunidirectional four-poles within which there is no energy dissipation. In contrast to the ideal active elements, feedback exists thus in the ideal active four-pole converters between the active side and the controlled side. Upon this fact is based the author's method of constructing ideal active converter systems with ideal active elements and of ideal transformers (Id.Tr.), used as lossless feedback circuits. The author examines first the multiple-series connection of a Un.V.Conv. and an Id.Tr. (Fig. 3). Assuming that $n = 1$, the $[a]$ -matrix of this system is:

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Ideal active elements of electric circuits

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$$[a_v] = \begin{bmatrix} \frac{1}{\mu+1} & 0 \\ 0 & 1 \end{bmatrix} = \begin{bmatrix} \frac{1}{M} & 0 \\ 0 & 1 \end{bmatrix}, \quad (9)$$

where $M = \mu + 1$ is the voltage conversion factor (μ being the open-circuit-operation voltage-transmission-factor). The system of Fig. 3 (which does not convert the input current) is called "ideal voltage converter" (Id.V.Conv.). Analogously, the system of Fig. 4 (series-parallel connection of a Un.Ct.Conv. and an Id.Tr.) is an "ideal current converter" (Id.Ct.Conv.). Its $[a]$ -matrix is:

$$[a_{ct}] = \begin{bmatrix} 1 & 0 \\ 0 & \frac{1}{\alpha+1} \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & \frac{1}{A} \end{bmatrix}, \quad (11)$$

where $A = \alpha + 1$ is the current conversion factor (α being the short-circuit-operation current-transmission-factor). For the ideal power converter (Id.P.Conv) the $[a]$ -matrix is:

$$[a_p] = \begin{bmatrix} \frac{1}{K} & 0 \\ 0 & \frac{1}{K} \end{bmatrix}. \quad (13)$$

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Ideal active elements of electric circuits

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where it is assumed that $M = A = K$. The three conversion factors are related to the relation between the output and input apparent powers by the expressions:

$$M = A = K^2 = \frac{u_2 i_2}{u_1 i_1} \quad (15)$$

M , A and K are complex magnitudes in the general case, and:

$$|M| > 1, |A| > 1 \text{ and } |K| > 1. \quad (16)$$

The Id.V.Conv., Id.Ct.Conv. and Id.P.Conv. convert thus the apparent power so that:

$$u_2 i_2 > u_1 i_1 \quad (17)$$

Using (9) and (11), respectively, the author finds:

$$Z_{\text{inp.Id.V.Conv.}} = \frac{1}{M} Z_1 \quad (18)$$

and

$$Z_{\text{inp.Id.Ct.Conv.}} = A Z_1 \quad (19)$$

Z_1 being the load impedance. Formulae (18) and (19) are conditioned by the fact that, when (17) is satisfied, the following inequality is true for them:

$$\frac{u_1}{i_1} \neq \frac{u_2}{i_2} \quad (20)$$

Card 4/8

Ideal active elements of electric circuits

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S/106/61/000/008/005/006
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This inequality is also valid for the ideal gyrator. Equivalent circuits. - With ideal active elements and ideal active four-pole converters it is possible to obtain a new type of equivalent circuits of negative resistances, converters and inverters of negative resistance, and also of real active elements. Negative resistances can be obtained with the aid of V.Ct.Conv. and Ct.V.Conv. by connecting the input and output terminals of a V.Ct.Conv., where we have:

$$Z_{inp} = - \frac{u_1}{i_2} = - \frac{1}{Y_n}, \quad (28)$$

and by connecting the input and output poles of a Ct.V.Conv., where we have:

$$Z_{inp} = - \frac{u_2}{i_1} = - Z_n. \quad (29)$$

After examining the cases of the negative-resistance converter and the negative-resistance inverter, the author shows how new equivalent circuits of a tube (or of a transistor) can be obtained with the aid of Id.V.Conv. and Id.Ct.Conv. [Ref. 4: E. V. Zelyakh, "Ideal'nyy preobrazovatel' moshchnosti - novyy element elektricheskoy skhemy" ("Ideal power converter - new element of the electric circuit") Elektrosvyaz, 1957, no. 1]. According to Zelyakh:

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Ideal active elements of electric circuits

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$$K = \frac{1}{\sqrt{\Delta_a}} \quad (38)$$

Δ_a being the determinant of the linear nonreversible four-pole ($0 < \Delta_a < 1$).
Formulae (15) and (38) permit obtaining the relation between the initial non-reversible four-pole parameters and the conversion factors of the Id.V.Conv. and Id.Ct.Conv.: 4

$$M = A = \frac{1}{\Delta_a} = -\frac{Z_{21}}{Z_{12}} = -\frac{Y_{21}}{Y_{12}} \quad (39)$$

The conversion factor of the Id.V.Conv. or the Id.Ct.Conv. involved in the new equivalent circuit is obtained from (39), and the magnitudes of the passive elements for the initial Π -shaped circuit are obtained from:

$$Y_{110} = Y_{11}, \quad Y_{220} = Y_{22} \quad (40)$$

and for the initial T-shaped circuit from:

$$Z_{110} = Z_{11}, \quad Z_{220} = Z_{22} \quad (41)$$

where the parameters with a 2-digit subscript refer to the initial circuit, and the parameters with a 3-digit subscript to the new equivalent circuit.

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Ideal active elements of electric circuits

27781

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A055/A127

Six equivalent circuits of the new type, constructed on the basis of formulae (39) - (41), are reproduced as examples, together with the corresponding equivalent circuits of the usual type. Three of these circuits are those of tubes, and three those of transistors. In conclusion the author says that the V.Ct.Conv. and the Ct.V.Conv. ought to play, in the electric circuits theory, the same part as the ideal passive elements R, L and C. There are 13 figures, 4 tables, 3 Soviet-bloc and 5 non-Soviet-bloc references. The four most recent references to English-language publications read as follows: Sharpe, Transactors, "Proc. IRE.", 1957, v. 45, no. 5. Keen, The transactor, "Electronic and Radio Engineering", 1957, v. 34, no. 12. Kawakami, Some fundamental considerations on active four-terminal linear networks, "IRE Transactions", 1958, v. CT-5, no. 2. Sharpe, Axioms on transactors, "IRE Transactions", 1958, v. CT.-5, no. 3. SUBMITTED: November 17, 1960

[Abstracter's note: The following subscripts are translated in text and formulae: l (load) stands for H, V (voltage) stands for H (same subscripts used in article ["nagruzka" and "napryazheniye"]); Ct (current) stands for T; P (power) stands for M; inp (input), outp (output).

Card 7/8

L 36205-66 EWT(d)/FSS-2/EEC(k)-2 BC

ACC NR: AP6011663

SOURCE CODE: UR/0106/66/000/004/0014/0019

AUTHOR: Tsirel'son, D. A.

ORG: none

TITLE: Methods of realization of gyrators

SOURCE: Elektrosvyaz', no. 4, 1966, 14-19

TOPIC TAGS: gyrator, circuit design, circuit theory

ABSTRACT: Principal properties of generalized gyrators with a particular emphasis on their stability are considered. Theoretical methods of realization of gyrators by means of negative-impedance converters (NIC) and passive two-terminal networks (TTN) are set forth. It is shown that two NIC and three TTN are necessary and sufficient for materializing the generalized gyrator. NIC with a conversion factor $\chi \neq -1$ ($-1 < \chi < 0$) can be generally used. The gyrator

Card 1/2

UDC: 621.372.58

L 36205-66

ACC NR: AP6011663

parameters depend on the TTN characteristics and χ . If NIC with $\chi = -1$ are used, their gyration impedance depends on the TTN characteristics, which is conducive to absolute stability. The accuracy, stability, signal dynamic range, load range and frequency band depend on the NIC used. Transistorized NIC with a dynamic range of 80 db are very stable and accurate at frequencies up to 100 kc. The use of gyrators in electric circuits operating at frequencies up to 30 kc seems to be promising in constructing active RC-circuits, etc. Orig. art. has: 9 figures and 17 formulas.

SUB CODE: 09 / SUBM DATE: 01Jul65 / ORIG REF: 006 / OTH REF: 005

Card 2/2 *llr*

TSIRELSON E. A.

1520. Angular Distribution of the γ -Quanta Produced by the Annihilation of Positrons, by N. A. Vlasov and E. A. Tsirelson. Doklady Akademii Nauk SSSR 59, p. 879-882, February 11, 1948. (In Russian)

The curve of angular distribution of gamma rays produced by the annihilation of positrons was obtained in an experiment which permitted closer measurements than those made by Beringer and Montgomery (Physical Review 61, p. 222, 1942). The counters used had a 0.2 mm thick layer of lead on the inner surface of the aluminum cylinder. Two rectilinear groups of 5 counters each, connected in parallel, determined by the method of coincidences, the direction of the two gamma rays. The sensitivity of the instrument permitted the use of small sources and relatively large distances between source and counters. The direct results of the measurements show that at least 95% of the coupled gamma rays of annihilation are emitted with angles of 180° (with less than one degree deviation) between them. This indicates that a corresponding fraction of the positrons are annihilated with energies not exceeding 80 ev.

TSIREL'SON, Simon Aronovich; RAZRAN, Mikhail Avraamovich. Primala
uchastiye TSIREL'SON, E.A.; MIROPOL'SKIY, S.V., kand. biol.
nauk, retsenzent; CHICHENEV, A.I., inzh., retsenzent;
BOBOSHKO, S.B., nauchnyy red.; GORDON, L.A., nauchnyy red.;
YEGOROV, S.A., nauchnyy red.; KAZAROV, Yu.S., red.; KRYAKOVA,
D.M., tekhn. red.

[Livability on board ships]Obitaemost' sudov. Leningrad,
Sudpromgiz, 1963. 266 p. (MIRA 16:3)
(Merchant seamen--Accommodations on shipboard)
(Ships--Heating and ventilation)

GOLOVKO, Ye.M., inzh.; TSIREL'SON, G.I., inzh.

Machine for the manufacture of cardboard and paper from paper
stock. Bum. prom. 37 no.7:19-23 J1'62. (MIRA 17:2)

1. TSentral'nyy nauchno-issledovatel'skiy i proyektno-konstruk-
torskiy institut bumagodelatel'nogo mashinostroyeniya.

ODOYEVTSEV, A.P.; TSIREL'SON, G.I.

Paperboard-making K-07 machinery for the manufacture of the outside
box cardboard. Bumagodel. mash. no.11:149-167 '63. (MIRA 17:6)

GOLOVKO, Ye.M., inzh.; TSIREL'SON, G.I., inzh.

New design of the dampening attachment for papermaking machines.
Hum.prom. 34 no.1:21-22 Ja '59. (MIRA 12:1)
(Papermaking machinery)

USSR / Farm Animals, Cattle. Q

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 7386

Author : Tsirel'son, I. B.
Inst : Moscow Technological Institute of the Meat
and Dairy Industries

Title : Increasing the Production of Dairy Cattle
under the Conditions of Moscow Oblast' by
Effecting a Specific Complex of Measures

Orig Pub : Tr. Mosk. tekhnol. in-ta myasn. i molochn.
prom-sti, 1958, vyp. 7, 115-119

Abstract : With the aid of a complex of zootechnical and
veterinary measures, uniform monthly milk
yields and parturitions of cows throughout
the entire herd were obtained on dairy farms
during the course of one year (39 cows in the
herd). -- K. M. Lyutikov

Card 1/1

101111001, H., M., P.

Feeding and Feeding Stuffs

Influence of increased feed in changing the quality of meat of the animal. *Vies.*
ind. SSSR, No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. UNCLASSIFIED.

TSIRELSON, N. B. and IONOV, P. S.

"The effect of fodder, grown with the help of gibberellin, on animals."

Veterinariya, Vol. 37, No. 10, 1960, p. 63

Tsirelson - Prof - Moscow Technol. Inst. Meat & Fat Industry

TSIREL'SON, Noy Borisovich, prof.; PETROVSKAYA, L.P., red.;
GOROKHOVA, S.S., tekhn. red.

[Principles of animal husbandry] Osnovy zhivotnovodstva.
Izd.2. Moskva, Vysshaya shkola, 1962. 417 p.
(MIRA 16:5)

(Stock and stockbreeding)

TSIREL'SON, N.B., prof.; IONOV, P.S., prof.

Effect of feeds grown with the application of gibberellin on
the animal organism. Veterinariia 37 no.10:63-64 0 '60.

(MIRA 15:4)

1. Moskovskiy tekhnologicheskii institut myasnoy i molochnoy
promyshlennosti.

(Feeds) (Gibberellin)

TSIREL'SON, N.B., doktor sel'skokhozyaystvennykh nauk; RIKARDO, D.I.,
kandidat veterinarnykh nauk; DEREVLEV, A.I., kandidat sel'-
skokhozyaystvennykh nauk.

Effect of Belin'kii's therapeutic serum on the addition of
weight to fattening hogs. Dokl. Akad. sel'khoz. 22 no.7:35-
37 '57. (MLRA 10:9)

1. Moskovskiy tekhnologicheskii institut myasnoy i molochnoy
promyshlennosti. Predstavlena akademikom N.G. Belen'kim.
(Serum) (Swine)

TORRELLSON, N. E., ed.

Bee culture, works of the conference, February 13-16, 1937.

201 p. (Its: Trudy) (54-47428)

SF531.V8

TSIREL'SON, N.B., prof.; BOGOLYUBOVA, G.V., dotsent; LISITSYN, Yu.P., dotsent; RIKARDO, D.I., dotsent; KEROV, M.A.; starshiy prepodavatel'; YEMEL'YANOV, V.P., assistant; ZOLOTINA, V.A. assistant

Methods for improving the transportation and keeping of cattle before slaughtering at meat combines. Zhivotnovodstvo 23 no.6:25-27 Je '61. (MIRA 16:2)

1. Moskovskiy tekhnologicheskii institut myasnoy i molochnoy promyshlennosti (for Yemel'yanov, Zolotina). (Slaughtering and slaughterhouses) (Beef cattle--Transportation)

TSIREL'SON, N.; LISITSIN, Yu.; KEROV, M.; YEMEL'YANOV, V.; ZOLOTINA, V.;
SHISHOVA, I.

More on the reducing of losses in the live weight of cattle.
Mias. ind. SSSR 33 no.4:30-31 '62. (MIRA 17:2)

1. Moskovskiy tekhnologicheskii institut myasnoy i molochnoy
promyshlennosti.

TSIREL'SON, N., KEROV, M.

Feeding and Feeding Stuffs

Influence of increased feed in changing the quality of meat of the animal. Mias. ind.
SSSR, No. 2, 1952

9. Monthly List of Russian Accessions, Library of Congress, August 1953, Unclassified.

TSIREL'SON, N., KEROV, M.

Feeding and Feeding Stuffs

Influence of increased feed in changing the quality of meat of the animal. Mias. ind. SSSR, No. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1953. Unclassified.

USSR/Farm Animals. The Swine

2-4

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 50075

Author : Tsirel'son, N.B., Rikardo, D.I., Derexlev
Inst : VASKhNIL / All-Union Academy of Agricultural Sciences imeni
Lenin

Title : The Influence of BTS [Belen'skiy's Therapeutic Serum] Upon
Weight Gain Increases in Swine During Fattening.

Orig Pub : Dokl. VASKhNIL, 1957, No 7, 35-37

Abstract : Serum obtained from the blood of large horned cattle was injected intramuscularly into the scapula of swine. The first group of animals received 0.25 ml and the second group 0.1 ml doses per 1 kg of live weight. The animals of the third group received hypodermic injections into the ear area 3 times daily with 3 day intervals. Best fattening results (15 kg weight gain per head per month) were obtained when intramuscular injections of the serum were performed during the first month. In order to stimulate fattening, it is

Card : 1/2

USSR/Farm Animals: The Swine

Abs Jour : Ref Zhur + Biol, No 11, 1958, No 50075

Q-4

recommended that intramuscular serum injections be employed
which should start on the first day of fattening.

Card : 2/2

USSR/Farm Animals. The Swine

Q-4

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 50073

Author : Tsirel'son, N.B., Rikardo, D.I., Derevlev A.I.

Inst : ~~USSR Academy of Sciences~~

Title : Belen'kiy's Therapeutic Serum (BTS) in Fattening of Swine for Meat.

Orig Pub : Zhivotnovodstvo, 1957, No 7, 61-62

Abstract : When Belen'kiy's therapeutic serum (BTS) was used in a 0.1 ml/kg dose 3 times for 10 days preceding fattening and for the first month of fattening, positive results were obtained. From the economic point of view, protein stimulation achieved in subconcentrated fattening procedures is more profitable than in concentrated fattening procedures, even when antibiotics are used.--A.D. Musin

Card : 1/1

TSIREL'SON, Simon Aronovich; RAZRAN, Mikhail Avraamovich. Prinimala uchast'ye TSIREL'SON, E.A.; MIROPOL'SKIY, S.V., kand. biol. nauk, retsenzent; CHICHENEV, A.I., inzh., retsenzent; BOBOSHKO, S.B., nauchnyy red.; GORDON, L.A., nauchnyy red.; YEGOROV, S.A., nauchnyy red.; KAZAROV, Yu.S., red.; KRYAKOVA, D.M., tekhn. red.

[Livability on board ships] Obitaemost' sudov. Leningrad, Sudpromgiz, 1963. 266 p. (MIRA 16:3)
(Merchant seamen--Accommodations on shipboard)
(Ships--Heating and ventilation)

SPITSYN, I.; VIKT, I.; APONSKIY, N.S.; TSIREL'NIKOV, V.I.

Thermal decomposition of potassium isopolychromates. Zhur.
neorg.khim. 5 no.7:1505-1508 J1 '60. (MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
Kafedra nerorganicheskoy khimii.
(Potassium chromate)

TSIRENSCHNIKOV, S.I.,

G. D. PASHCHEVSKII, ZhukhIM FROM 14, 1014-18 (1937)

TSIRENCHIKOVA, A.P.

TSIRENCHIKOVA, A.P.

For young Muscovites. Gor.khoz.Mosk. 31 no.8:23-25 Ag '57.

(MLRA 10:9)

1. Direktor univermaga "Detskiy mir."
(Moscow--Department stores)

РИМАН, И.Б.; ТШИРЕШКИН, Б.Д.

"Speech audiometry; principles and instructions in speech audiometry in German-speaking areas" by K. Hahlbrock. Reviewed by I.B. Riman, B.D. TSireshekin. Vest. otorin. 21 no.2:109-112 Mr-Apr '59. (MIRA 12:4)
(HEARING) (HAHLBROCK, K.)

TS IRESHKIN, B.D.

Method audiometry. Vest. otorinolar., Moskva 15 no.4:69-72 July-Aug
1953. (GIML 25:1)

1. Candidate Medical Sciences. 2. Of the Clinic for Diseases of the
Ear, Throat and Nose (Director -- Prof. A. G. Likhachev), First Moscow
Order of Lenin Medical Institute.

TSIRESHKIN, D. M.

Puncture of the heart in acquired mitral and aortic defects
(survey of the literature). Grud. khir. no.2:111-116 '62.
(MIRA 15:4)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni S. I.
Spasokukotskogo (dir. - akad. A. N. Bakulev) i 1-y Gorodskoy
klinicheskoy bol'nitsy imeni N. I. Pirogova (glavnyy vrach -
zasluzhennyy vrach RSFSR L. D. Chernyshev)

(PUNCTURES(MEDICINE)) (MITRAL VALVE—DISEASES)
(AORTIC VALVE—DISEASES) (HEART—EXAMINATION)

TSIRESHKIN, D.M.; ZHEGULEVTSEVA, A.P.

Acute typhoid cholecistitis. Vest. khir. 94 no.1:113-114 Ja '65.
(MIRA 18:7)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni Spasokotskogo
(dir. - akademik A.N. Bakulev) i 1-y Moskovskoy gorodsk, klini-
cheskoy bol'nitsy imeni Pirogova (glavnyy vrach - zasluzhennyy
vrach RSFSR L.D.Chernyshev).

TSIRESHKIN, D.M.

Diagnostic significance of puncture of the left auricle in
acquired mitral heart defects. Grud.khir. no.3:28-36 '61.

(MIRA 14:9)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni Spasokukotskogo
(dir. - akad. A.N. Bakulev) i 1-y Gorodskoy klinicheskoy bol'nitsy
(glavnyy vrach - zasluzhennyy vrach RSFSR L.D. Chernyshev), Moskva.
(MITRAL VALVE--DISEASES) (PUNCTURES (MEDICINE))

TSIRESHKIN, D.M.

Method for the dilution of dyes; survey of the literature. Grad.
khir. 6 no.4:111-116 J1-Ag '64. (MIRA 18:4)

1. Fakul'tetskaya khirurgicheskaya klinika imeni Spasokukotskogo
(dir. - akademik A.N.Bakulev) II Moskovskogo meditsinskogo
instituta imeni Pirogova i 1-ya Gorodskaya klinicheskaya bol'nitsa
imeni Pirogova (glavnyy vrach L.D.Chernyshev), Moskva.

PETROSYAN, Yu. S.; TSIRESHKIN, D. M.; KISIS, S. Ya.; TSUKERMAN, G. I.

Clinical significance of puncture of the left ventricle in the diagnosis of acquired aortal heart defects. Grad. khir. no.4:27-33 '61.
(MIRA 14:12)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni Spasokukotskogo II Moskovskogo meditsinskogo instituta (dir. - akad. A. N. Bakulev), Instituta grudnoy khirurgii (dir. - prof. S. A. Kolesnikov) AMN SSSR i Gorodskoy klinicheskoy bol'nitsy No.1 (glavnyy vrach - zasluzhennyy vrach RSFSR L. D. Chernyshev).

(AORTA—DISEASES) (HEART—RUPTURE)

HUNGARY / Chemical Technology. Carbohydrates and
their Processing.

H

Abs Jour: Ref Zhur-Khimiya, No 22, 1958, 75409.

Author : Tsirfus.

Inst : Not given.

Title : A Mechanization of Loading a Dry Press.

Orig Pub: Cukoripar, 1958, 11, No. 1, 13-15.

Abstract: A method for cyclone computation is examined
and an example for the computation of a cy-
clone-dust extractor is given.

Card 1/1

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COMMON ELEMENTS

COPY MATERIALS INDEX

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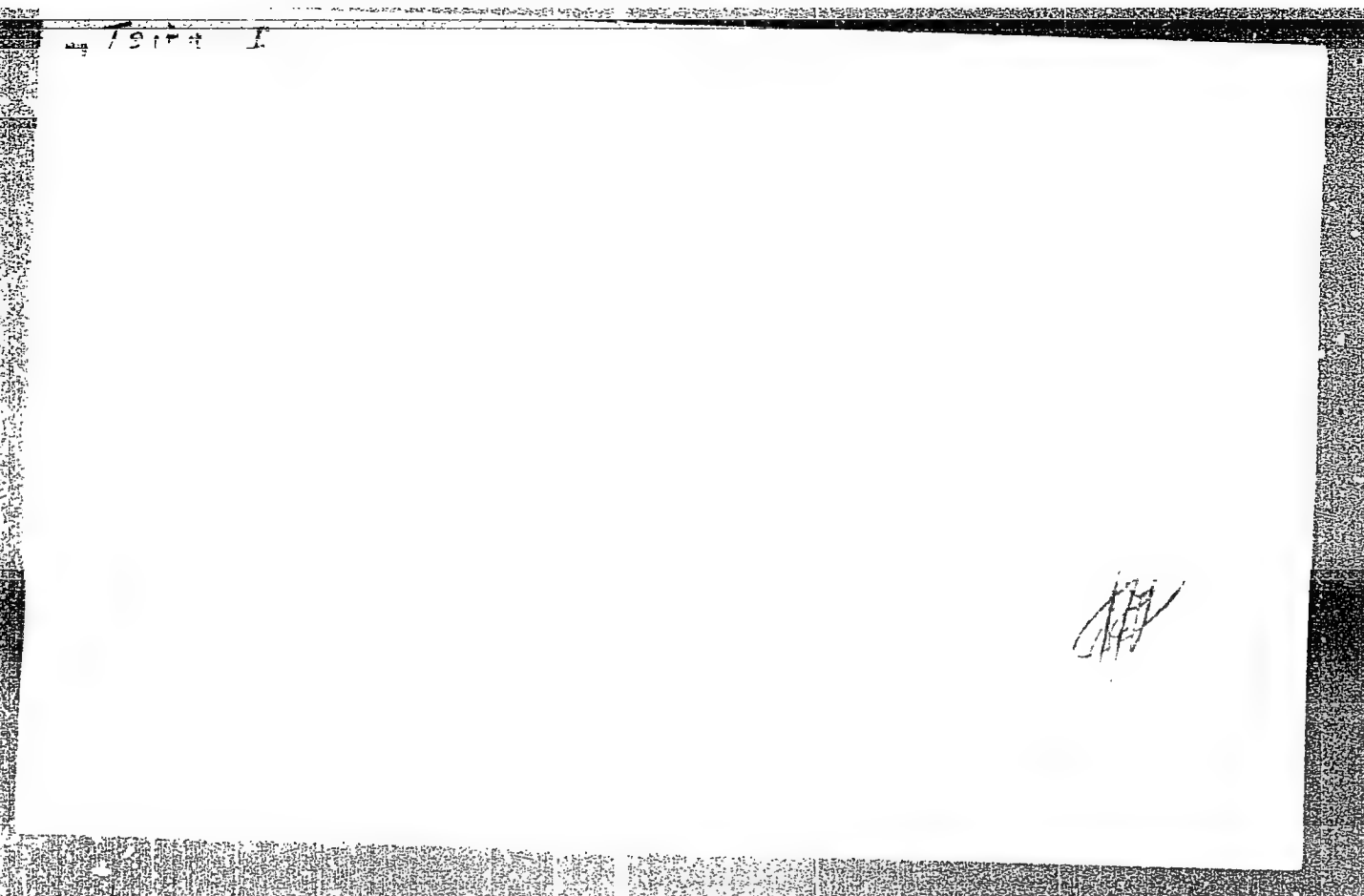
PROCESSES AND PROPERTIES A-Z

3

A Probability of cumulative excitation of mercury atoms.
V. A. Fabrikant and I. Tsirg. *Physik. Z. Sowjetunion* 12,
324 (1937)(in English); cf. C. A. 32, 2422. -- The
probability of cumulative excitation of Hg atoms is calcul.
from the intensity of lines in the Hg arc. G. M. M.

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757110017-1



APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757110017-1"

TSING, I.,
V.A. FABRIKANT, Physik. Z. Sowjetunion 13, 23-31 (1938)

TSIROG, I.P.

UL'YANSKIY, S.V., professor, doktor tekhnicheskikh nauk, *TSIROG, I.P.*,
ispolnyayushchiy obyazannosti starshego nauchnogo ~~sotrudnika~~

Problem of scale-models in studying operation of ventilation
systems. Trudy Stroi.inst. Mosgorispolkoma no.4:6-8 '53.
(Ventilation) (MLRA 8:3)

S/182/60/000/002/008/012
A161/A029

AUTHORS: Sagatelyan, L.S.; Tsirik, L.M.

TITLE: Mechanized Removal of Stampings by Compressed Air in Cold Stamping¹⁸

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 2, pp. 37 - 39

TEXT: A brief illustrated description is given of pneumatic ejecting devices used on cold-stamping presses at the press shop of the Moskovskiy avtomobil'nyy zavod im. Likhacheva (Moscow Automobile Plant imeni Likhachev). Presses of up to 80-tons capacity are fitted with universal blowers consisting of a one-way valve (Fig. 1) on the press frame, and a transportable nozzle (2) attached on a special bracket (3). A disk (4) with a cam (5) is fixed on the end of the press crankshaft, and air gets into the nozzle at every revolution of the crankshaft when the roller in the cam (cross section view in Fig. 1) exerts pressure on the handle (6) and through it on the rod (7) and spring (8) opening the air inlet from the air main into the nozzle. The stamping is blown off by the air jet, falls on a deflector plate attached to the press bed plate and into a box. The nozzle is easily adjustable by means of swinging and telescopic brackets and easily removable. A different blower (Fig. 2) is used on a 600-ton coining press

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A161/A029

Mechanized Removal of Stampings by Compressed Air in Cold Stamping


for flat parts (washers, flanges, nuts), with one-way valve of the same design as in Figure 1. The hook (4) lifts the lever (5) at the upward run of the press plunger and slips off the lever before the plunger reaches the top position, when a spring retracts the lever. Air is led directly into the dies when the stampings cannot be removed by means of a transportable nozzle (as described above). One such die is shown (Fig. 3). It is a compound die for cutting out, extruding and punching a hole. The stamping remains in the bottom die half and air is let in by two bores drilled in the bottom die half. An auxiliary lever is used for large and heavy stampings and deep-extruded parts. A die with a lever for extruding 3.5 kg brake chamber casings is illustrated (Fig. 4). The hook (1) lifts the handle (2), and pushers (5) push the front edge of the stamping 30-40 mm upward and air is blown through holes drilled at a 60° angle in the top die part (6) (the lever system actuating the pushers is to the left of the top die and not shown in the figure). Dies for bending the gasoline tank filling pipe (Fig. 5) have a blower (1) in the top part. Punching dies for a chassis frame crossbar are provided with a built-in air cylinder in the bottom part (Fig. 6). The piston rod is connected with the slider (3) with a tooth that grips and

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A161/A029

Mechanized Removal of Stampings by Compressed Air in Cold Stamping

removes the part when air enters the right end of the air cylinder and the piston moves to the left. Balls (6) in the slider assist in the operation, and the plunging stop (7) goes down when the slider moves out and returns after the slider returns into its initial position. The described devices have raised the work productivity by 15 - 20% and improved the safety. They can be made in press shops and cost little. There are 6 figures.



Card 3/3

SACAT LMAN, L.S.; TSERIN, L.S.

Prototype "mechanical hand" for the removal of stamped
parts. Kuz..shom. proyev. 3 no.10:45-47 0 '61.

(PETA 14:10)

(Sheet metal working machinery)

(Materials handling)

(Automatic control)

S/182/60/000/010/015/015/XX
A161/A030

AUTHORS: Sagatelyan, L.S.; Tsirik, L.M.

TITLE: Shovel Ejectors for Removing Parts in Cold Stamping

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 10, pp. 44 - 45

TEXT: A group of designers and mechanics at the press shop of the Moskovskiy avtomobilnyy zavod im. Likhacheva (Moscow Automobile Plant im. Likhachev) has designed and made several universal ejectors for removing parts that remain in the top die half after cutting and drop when pushed out by the press ejector. Previously the worker had to catch the ejected ready part by hand or with a special hand shovel. Large and medium size parts were put into the die by one worker and caught by another on the rear of the press and put into a box or on a conveyor. Two new ejectors are described. The pendulum-type ejector (Fig. 1) is designed for medium-size parts and is suitable for removing sheet metal parts. It is used on two-stand open frame presses (300-ton ZIL presses), is placed on the rear of the press and connected by two brackets (1) to the slide. Motion is transmitted from the brackets by rods (2) and levers (4) to the rod (5) with a cramp holding a tray (8). The rod (5) swings on the axle (7). When the slide moves upwards, the tray enters the space between the die halves, and when the

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slide descends it moves out with a 30° tilt. The other rod (11) with cramp (12) supports the tray and tilts it. Holes are provided in the brackets (1) for adjusting the tray level. If not needed, the tray (8) can be removed, and the bracket (9) turned aside on the axle (13) and fixed by the spring latch (14). One of the two bins at the rear of the press is for collecting the parts, and the other for cuttings that are cut into pieces by blades on the die. The other ejector (Fig. 2) is designed for presses with C-shaped frame (80-ton ZIL presses). It is driven from the crankshaft. The tray and its drive system are placed between the frame walls, the work zone is open, and bins can be held on the rear side of the press. The ejector works as follows: An eccentric consisting of two halves (2) is set on the cheek (1) of the crankshaft. The eccentric moves the rod (3). When the eccentric rotates, the motion of the rod (3) is transmitted through the fork (5) to the pusher (6) moving in the guide bearing (7). The reciprocative motion of the pusher is transmitted through the shackle (8) to the fork (9) and the fork shackle (10) that rocks the pendulum lever (11). The tray (13) is attached to the bottom end of the lever (11) by the pins of the telescopic clip (12). The tray can swing. When the slide rises the tray enters into the space between the die halves and the part drops on it; when the slide descends, the tray retracts and tilts, and the part slips down into the bin. The

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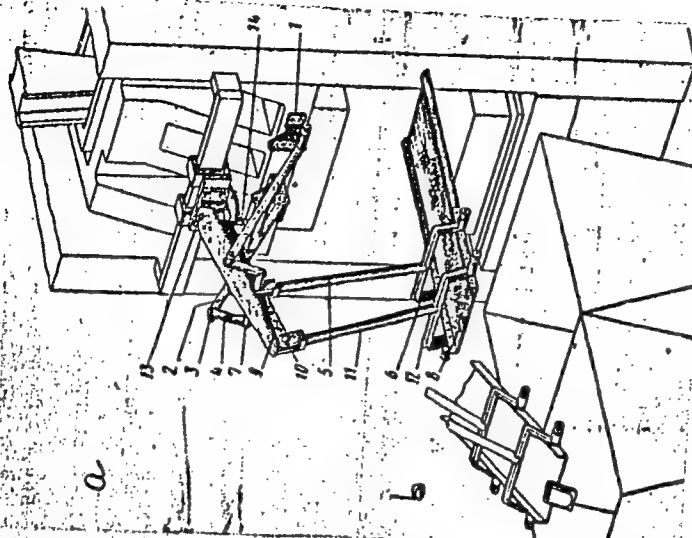
support on the rear of the press guides the tray and controls its tilt. It consists of two brackets (14) on the bar (15). The guides of the tray slide over immobile (16) and mobile (4) rollers on the brackets. The bar (15) with the brackets can be displaced in height. The tray can be adjusted for work with different dies by displacing the rear support and resetting the tray on the levers (11) that are provided with holes for resetting. This ejector is now working together with automatic roller feed on a 80-ton ZIL press. The trays are exchangeable. The new ejectors have made work easier and safer and raised the work productivity by 20 - 25%. There are 2 figures.

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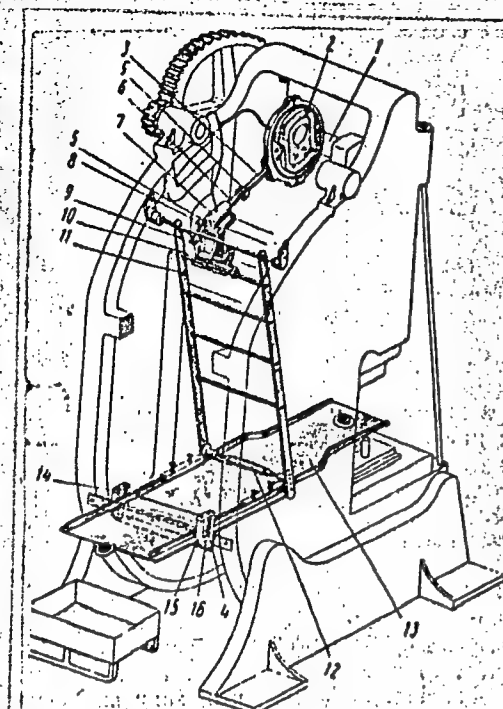
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Figure 1



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Shovel Ejectors for Removing Parts in Cold
Stamping

Figure 2

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TSIRIK, L.M.; ORLOV, A.V.

Mechanizing the removal of forgings and tails from trimming presses.
Avt.prom. 28 no.12:30-33 D '62. (MIRA 16:1)

1. Nauchno-issledovatel'skiy tekhnologicheskii institut avtomobil'noy
promyshlennosti.

(Forging)

SAGATELYAN, L.S.; TSIRIK, L.M.

Mechanizing the mounting of dies. Kuz. shtam. proizv. I no.10:44-46
0 '59. (MIRA 13:2)

(Dies (Metalworking))

TSIRIK, L.M.

Mechanized die exchange abroad. Avt.prom. 30 no.2:44-47 F '64.
(MIRA 17:4)

SAGATELYAN, L.S.; TSIRIK, L.M.

Mechanization of the metal preparation department of a die-stamping
shop. Kuz.-shtam. proizv. no.4:39-41 Ap '61. (MIRA 14:3)
(Sheet-metal work—Equipment and supplies)

S/182/61/000/010/004/004
D038/D113

AUTHORS: Sagatelyan, L.S., and Tsirik, L.M.

TITLE: Floor-type "mechanical hand" for lifting stamped parts

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, no. 10, 1961, 45-47

TEXT: The authors describe a mechanical hand developed by the design office of the press department, and built by the repair shop of the Moskovskiy avtomobil'nyy zavod im. Likhacheva (Moscow Automobile Plant im. Likhachev). The mechanical hand which is used at the press department of the plant was designed as a welded trolley on wheels with four screw jacks for immobilizing it on the floor. The trolley has mechanisms for gripping, lifting and removing cold stamped parts from the working zone of a press, and a belt conveyer for transferring the parts from one press to another. The mechanical hand can operate with different presses equipped with electric switches. The authors conclude that, after the introduction of the mechanical hand, it was possible to set up production lines for stamping wheel brake discs, back axle covers, spare wheel brackets, etc., and that only one workman instead of two is required. There are 5 figures.

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SAGATELYAN, L. S. ; TSIRIK, L. M.

Scoop-type ejector for the removal of parts in die stamping. Kuz.-
shtam. proizv. 2 no.10:44-45 0 '60. (MIRA 13:10)
(Sheet-metal work)

TSIRIE, Y., Inzh.

Arch construction of farm buildings. Eksp. proekt. no. 51
42-48 '62. (MIRA 1819)

ACC NR: AP5028321
 SOURCE CODE: UR/0057/65/035/011/2054/2064
 AUTHOR: Dyuzhev, G. A.; Martainovskiy, A. M.; Pikus, G. Ye.; Tsirkel', B. I.; Yur'yev, V. G.
 ORG: none
 TITLE: Investigation of the volt-ampere characteristics of thermionic converters
 SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 11, 1965, 2054-2064
 TOPIC TAGS: direct energy conversion, thermionic energy conversion, thermionics
 ABSTRACT: The volt-ampere characteristics of cesium-filled thermionic energy converters were examined both in the diffusion and arc modes of operation. Plane-parallel diodes with interelectrode spacings of 0.02-2 mm and electrode surfaces of 0.3-0.8 cm² were used in all the experiments. At the diffusion mode, the characteristics conformed with theoretical data (B. Ya. Moyzhes and G. Ye. Pikus, FTT, 2, 4, 756, 1960). At high temperatures, the transition to the arc mode took place smoothly, which is explained by the presence during the experiments of an accelerating field at the emitter. The fact that even the smallest arc current was close to the emission current was also attributed to this accelerating field. The absence of saturation in the volt-ampere characteristics was thought to be connected with the anomalous Schottky effect arising as the result of the cathode barrier. Orig. art. has: 6 formulas and 9 figures.
 Card 1/2 UDC: 537.523.5

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ACC NR: AP5028321

SUB CODE: 10 / SUBM DATE: 08Feb65/ ORIG REF: 006/ OTH REF: 003/ ATD PRESS:

4171

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TSIRIKHOVA, E.M., aspirant

Distribution of lead-zinc mineralization areas adjacent to
Sadon latitudinal structures. Izv. vys. ucheb. zav.; geol.
i razv. 7 no.11:59-65 N '64. (MIRA 18:5)

1. Vsesoyuznyy institut mineral'nogo syr'ya.

TSIRIKHOVA, E.M.

Structural characteristics of the Sadon ore zone. Geol. rud.
mestorozh. 6 no.6:128-135 N-D '64.

(MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo
syr'ya, Moskva.

ZHURAVLEV, A.M., inzh.; KATSMAN, Z.Ya., inzh.; KNYAZEVA, A.V., inzh.; SYRNIKOVA,
L.N., inzh.; TSIRIL'SON, V.A., inzh.

Mechanization of conveying operations at the "Krasnaya Kravchitsa"
Plant. Mekh. i avtom.proizv. 19 no.1323-25 1a 105.
(MIRA 18:3)

TSIRIN, A. A.

6750. Iofinov, S.A., Turbin, B.G., i Tsirin, A. A.
Mekhanizatsiya i elektrifikatsiya sel'skogo khozyaystva Kiyev,
Gosset'khozizdat USSR, 1954. 627 s. s. ill. 22 sm. (Uchebniki
i ucheb. Posobiya dlya s.-kh. tekhnikumov). 12.000 ekz. 12 r.
7 per. -- Bibliogr. s. 621.622. -- Na ukr. yaz.- (55-1989)
631.3 & (016.3)

SO: Knizhnaya Letopis' No. 6, 1955